Silicon NPN Power Transistors 2SC3309

DESCRIPTION

·With TO-220Fa package
·High collector breakdown voltage
·Excellent switching times

APPLICATIONS

·Switching regulators and high voltage switching applications
·High speed DC-DC converter application

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

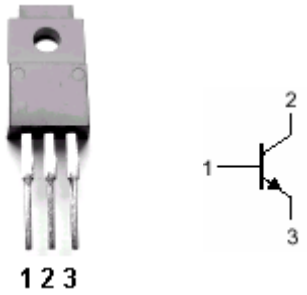


Fig.1 simplified outline (TO-220Fa) and symbol

Absolute maximum ratings(Ta=25□)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	500	V
V_{CEO}	Collector-emitter voltage	Open base	400	V
V_{EBO}	Emitter-base voltage	Open collector	7	V
I_C	Collector current (DC)		2	A
I_{CM}	Collector current-peak		4	A
I_B	Base current		0.5	A
P_C	Collector dissipation	T_a=25□	2.0	W
		T_C=25□	20	
T_j	Junction temperature		150	□
T_{stg}	Storage temperature		-50~150	□

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CHARACTERISTICS

Tj=25□ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C=10mA ;I_B=0	400			V
$V_{(BR)CBO}$	Collector -base breakdown voltage	I_E=1mA; I_E=0	500			V
V_{CEsat}	Collector-emitter saturation voltage	I_C=1A; I_B=0.2A			1.0	V
V_{BEsat}	Base-emitter saturation voltage	I_C=1A; I_B=0.2A			1.5	V
I_{CBO}	Collector cut-off current	V_{CB}=400V; I_E=0			100	μA
I_{EBO}	Emitter cut-off current	V_{EB}=7V; I_C=0			1	mA
h_{FE-1}	DC current gain	I_C=0.1A ; V_{CE}=5V	20			
h_{FE-2}	DC current gain	I_C=1A ; V_{CE}=5V	8			
Switching times						
tr	Rise time	I_{B1}=-I_{B2}=0.08A V_{CC}≈200V;R_L=250Ω PW=20μs			1.0	μs
t_s	Storage time				2.5	μs
t_f	Fall time				1.0	μs

PACKAGE OUTLINE

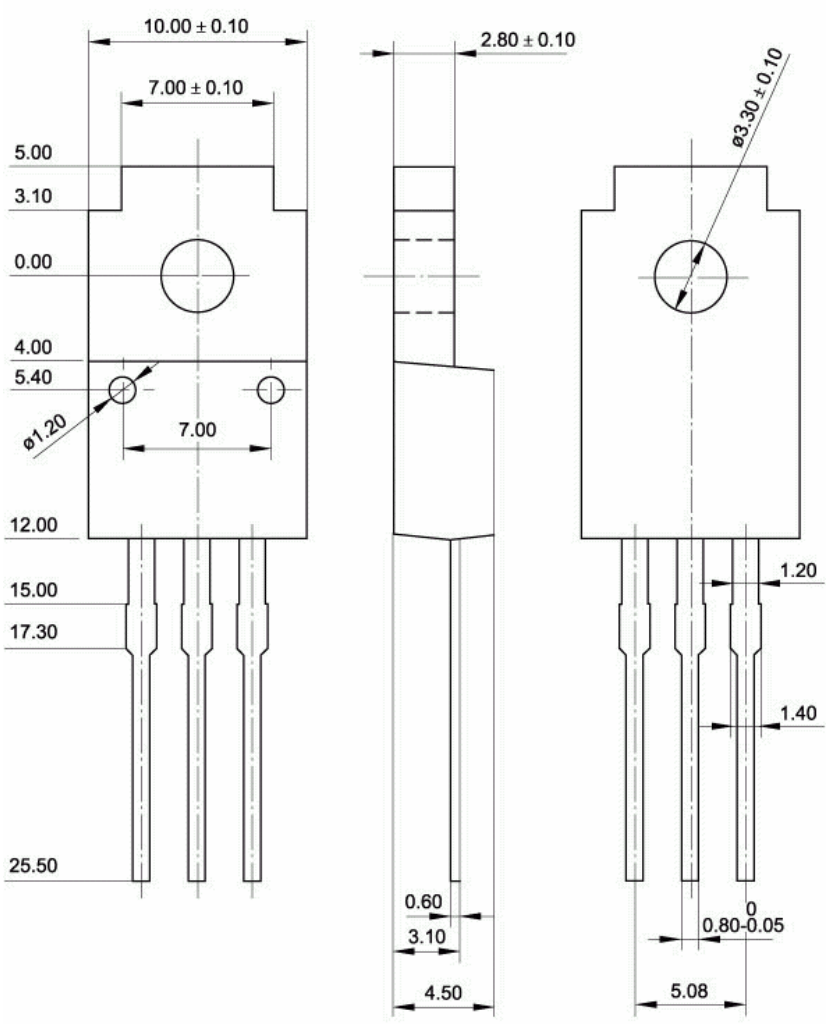


Fig.2 Outline dimensions (unindicated tolerance:±0.15 mm)

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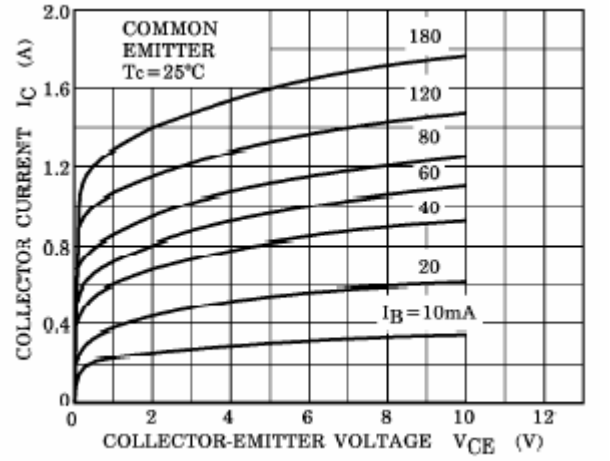


Fig.3 Static Characteristic

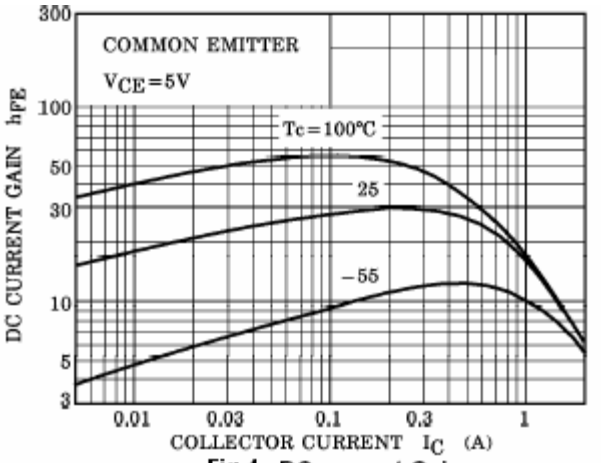


Fig.4 DC current Gain

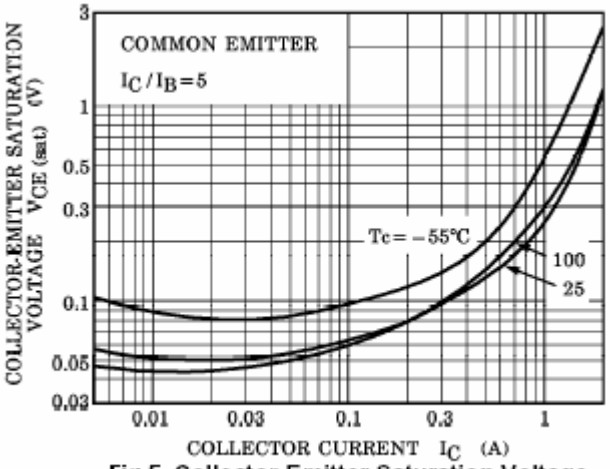


Fig.5 Collector-Emitter Saturation Voltage

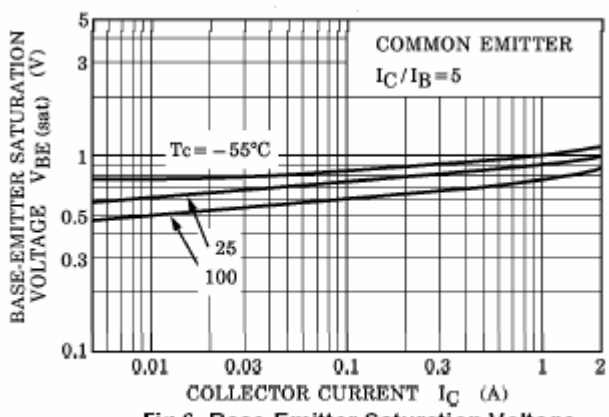


Fig.6 Base-Emitter Saturation Voltage

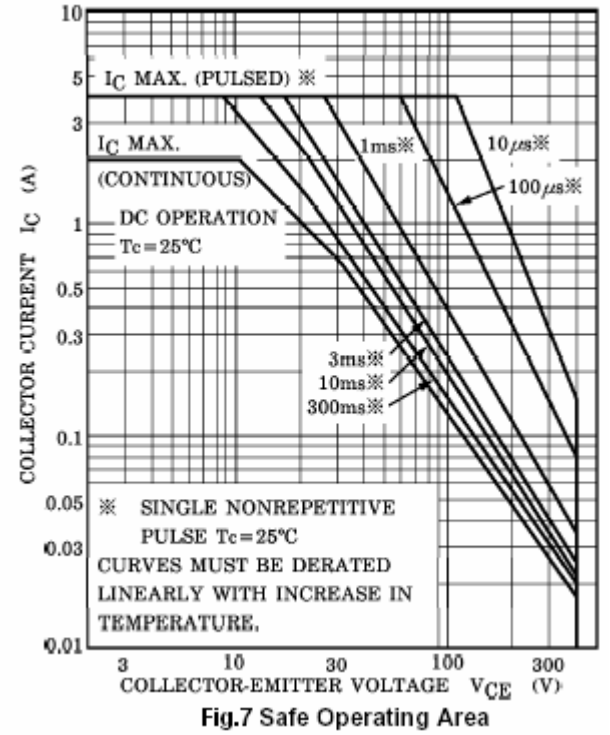


Fig.7 Safe Operating Area